

### What is Powassan virus?

Powassan (POW) virus causes a rare but serious disease and is transmitted through the bite of an infected tick. It was first identified in 1958 and named after Powassan, Ontario, the town of its discovery. POW virus is similar to some mosquito-borne viruses, including West Nile virus.

### Do we have Powassan virus in Vermont?

In 1999, one Vermont resident was diagnosed with Powassan encephalitis. There have been no reports of POW virus disease in Vermont since then. Cases of POW virus disease have been reported from New York, Maine, and other northern tier states in the US, as well as the Canadian provinces of Ontario, Quebec and New Brunswick.

### How is Powassan virus spread?

Powassan virus is spread by ticks. There is some evidence that infection can happen quickly, as soon 15 minutes after a tick attaches. *Ixodes cookei*, commonly known as the groundhog tick or woodchuck tick, is primarily responsible for transmitting POW virus. *I. cookei* is found east of the Rocky Mountains and from southern portions of Texas to northeastern regions of United States and Canada. This tick feeds mostly on woodchucks and other medium-sized mammals but will bite people if given the opportunity.

There is another type POW virus that is likely spread by *Ixodes scapularis* ticks, commonly known as deer ticks or black-legged ticks. This type is sometimes called deer tick virus. It is not known how often this type of POW virus causes human illness, but a few cases have been reported in other states. Deer ticks are abundant in Vermont.

### What are the symptoms of Powassan virus disease?

Most people who become infected with POW virus do not feel ill, but symptoms of the disease can be severe. Symptoms include fever, headache, vomiting, muscle weakness, drowsiness, confusion, loss of coordination, speech difficulties and memory loss. The virus sometimes infects the central nervous system and cause inflammation of the brain, known as encephalitis, or inflammation of the membranes surrounding the brain and spinal cord, called meningitis. About 10% of POW virus infections result in death. Some patients who recover from the initial illness have continuing neurological problems.

### Who is at risk for getting Powassan virus disease?

Although the risk of infection with POW virus is low, the disease is serious and has been known to cause illness in otherwise healthy adults as well as people with compromised immune systems. Spending time in grassy and wooded areas, especially between May and August, increases the risk for infection. Entering infrequently used buildings, such as seasonal camps, is also associated with increased disease risk since these structures make good nesting places for small mammals and woodchuck ticks.

### What is the treatment for Powassan virus disease?

There is no specific treatment for POW virus disease. Treatment consists of supportive care, rest and increased fluid intake to prevent dehydration.

## How do you prevent Powassan virus disease?

The best way to prevent POW virus disease is to prevent tick bites.

### While outdoors:

- Wear long pants and long-sleeved shirts to minimize skin exposure to ticks.
- Tuck your pants into your socks to form a barrier to tick attachment.
- Wear light-colored clothing to help see ticks on your clothing.
- Check for ticks, looking particularly for what may look like nothing more than a new freckle or speck of dirt, and remove ticks promptly.
- Use an effective tick repellent on your skin or on your clothing. There are several repellents that are effective against ticks. For an up-to-date list of EPA registered products, see <http://cfpub.epa.gov/opprpref/insect/>. Repellents should not be used on infants under 2 months of age. Read the label carefully and use according to the recommendations.
- Use permethrin on clothing you wear outside. Permethrin is an insect repellent that is very effective in preventing tick bites.

### After you come inside,

- Check your or your child's body for ticks, and remove them promptly. Pay special attention to the head, armpits, and groin area.
- Examine clothing and gear for ticks. Placing your clothes in a hot dryer for 60 minutes will kill any ticks that may be clinging to the fabric.
- Check your pets for ticks as well. Consult your veterinarian for advice on choosing effective tick repellents for your pets.

A tick needs to be attached to a person for a certain length of time before it can cause disease. It may take as little as 15 minutes for a tick to transmit POW which is very quick compared to the attachment time needed for Lyme disease (24-48 hours) or anaplasmosis (12-24 hours).

## How do you remove ticks?

Try to remove the tick as soon as you discover it because prompt removal can prevent transmission of tick-borne diseases.

### To safely remove ticks:

1. Use fine-tipped tweezers and firmly grasp the tick close to the skin. Avoid touching the tick with your bare hands
2. With a steady motion, pull straight up until all parts of the tick are removed. Do not twist or jerk the tick. Do not be alarmed if the tick's mouthparts remain in the skin. Once the mouthparts are removed from the rest of the tick, it can no longer transmit disease-causing bacteria.

**DO NOT** use petroleum jelly, a hot match, nail polish, or other products to remove a tick. These methods are ineffective.

### Thoroughly wash your hands and the bite area

After removing the tick, wash your hands with soap and water or use an alcohol-based hand sanitizer if soap and water are not available. Clean the tick bite with soap and water or use an antiseptic such as iodine scrub or rubbing alcohol.